

Claims

1. Valve adjusting device, in particular a throttle valve adjusting device for combustion engines, with a valve housing that features a valve connected to a valve shaft, via which the valve is pivoted in the valve housing at least on one side, and with a drive unit that features at least one electric motor and a reduction gear to drive the valve and a sensor for reporting the position of the valve adjustment, whereby at least the gear is arranged in a housing that features a contact plate fixed to the valve housing and a cover closing the housing, characterized in that the electric motor (7) is arranged outside the housing (9) and the valve housing (2), whereby the electric motor (7) is embodied open on one side and over a pole tube (16) whose first end (17) placed on a drive shaft (14) of the electric motor (7) is plugged on an annular shoulder (20) of the contact plate (10) running axially, by means of which its open end (17) can be closed, and whose second, closed end (18) is arranged at least indirectly in a bearing block (26) of the valve housing (2), whereby the drive shaft (14) of the electric motor (7) is supported on the one side in the contact plate (10) and on the other side in a bearing position (19) at the closed end (18) of the pole tube (16), and whereby the pole tube (16) simultaneously serves as the housing of the electric motor (7).
2. Valve adjusting device according to Claim 1, characterized in that the essentially axially running annular shoulder (20) of the contact plate (10) is embodied in the form of segments.
3. Valve adjusting device according to Claim 1 or 2, characterized in that the magnets are fixed in the pole tube (16) by means of an axially arranged spring element (21) that presses the magnets in a tangential direction against at least one projection (22) on the inner wall of the pole tube (16), and the pole tube (16) features, at least on the side facing the valve housing (2), a flat spot (23) running in the axial direction.
4. Valve adjusting device according to one of the previous Claims, characterized in that brush springs (13) of the electric motor (7) connected to a collector (12) are fixed on the

contact plate (10) of the adjusting device (1) by either frictional or positive engagement connections for the contacting.

5. Valve adjusting device according to one of the previous Claims, characterized in that the contact plate (10) features an attachment flange (41) to fix a plug (36) to the electrical contacting, whereby the connecting pins (38) of the respective plug (36) are injected or locked in.
6. Valve adjusting device according to one of the previous Claims, characterized in that the gear (8) features a drive gear (28) arranged on the drive shaft (14) of the electric motor (7) so that it is at least torsionally rigid, a gear center wheel (29) in the form of a double gear wheel that is supported on a gear center wheel axle (30) and features a driven gear (32) arranged on the valve shaft (4) so that it is at least torsionally rigid, whereby the gear center wheel axle (30) is fixed to the valve housing (2) and extends into the housing (9) of the gear (8) through a hole (31) in the contact plate (10).
7. Valve adjusting device according to one of the previous Claims, characterized in that the valve housing (2) is made of light metal or plastic.
8. Valve adjusting device according to one of the previous Claims, characterized in that the contact plate (10) is made of a nonconductive plastic.
9. Valve adjusting device according to one of the previous Claims, characterized in that the sensor is embodied as a potentiometer, which is arranged in the housing (9) and whose arm tracks are printed directly onto the contact plate (10) or a printed circuit board (34).
10. Valve adjusting device according to one of the previous Claims, characterized in that the electrical conducting tracks (37) are arranged in the housing (9) and printed or sprayed or injected onto the contact plate (10).

11. Valve adjusting device according to one of Claims 1 to 9, characterized in that the electrical conducting tracks (37) are embodied as stampings, which are arranged bare in the housing (9) of the gear (8).
12. Valve adjusting device according to one of the previous Claims, characterized in that the electric motor (7) is fixed to the bearing block (26) so that it is torsionally rigid, via screws (27) or projections embodied at the closed end (18) of the pole tube (16), which projections engage in a corresponding recess of the bearing block (26).
13. Valve adjusting device according to one of Claims 1 to 11, characterized in that the torsional strength of the pole tube (16) is produced via the axially running shoulder (20) of the contact plate (10), in that the flat spot (23) of the pole tube (16) engages in a corresponding flat spot of the otherwise annular shoulder (20).
14. Valve adjusting device according to one of Claims 1 to 11, characterized in that the torsional strength of the pole tube (16) is produced by means of a screw connection between the pole tube (16) and the contact plate (10).